

IN THE UNITED STATES DISTRICT COURT FOR THE  
NORTHERN DISTRICT OF OKLAHOMA

(1) DENNIS R. CORNWELL, Individually, )  
and as Personal Representative )  
of the Estate of RENIA A. CORNWELL, )  
Deceased, )

Plaintiff, )

v. )

(1) UNION PACIFIC RAILROAD CO., )  
a Delaware Corporation, )

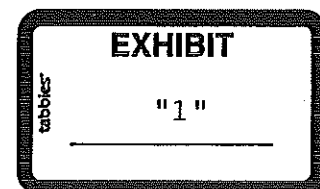
Defendant. )

CASE NO. 08-CV-638-JHP-TLW  
JUDGE JAMES H. PAYNE

**DECLARATION OF ALLEN HALEY, JR.**

I, Allen W. Haley, Jr., of legal age and sound mind, do under oath offer the following statements which are true and accurate and are based upon my personal knowledge:

1. I have been employed by Plaintiff as a railroad expert in this case. My CV is attached hereto as Exhibit "A". I have previously prepared an expert report dated November 18, 2009 and a supplemental expert report dated December 14, 2009, which contain my opinions and conclusions in this case and are attached to this declaration as Exhibits "B" and "C". The statements contained in my expert report and supplemental expert report are true and accurate and are adopted herein as an accurate reflection of my opinions and conclusions in this case.



2. The signal house, which was present at the subject railroad crossing and which constituted an obstruction within the sight triangle required by OAC 165:32-1-3 and 165:32-1-11(b), limited the vision of a motorist, such as Mrs. Cornwell, of the oncoming subject train and was not, at the time of the subject accident, necessary for the operation of the railroad and railroad equipment. This is so because the signal house served no necessary purpose other than to operate lights and gates at a crossing. At the time of the subject accident, there were no lights or gates installed at the subject crossing. Therefore, the signal house, which was installed inside the sight triangle, obstructed Mrs. Cornwell's view of the oncoming train, yet Mrs. Cornwell did not have the benefit of the protection of the lights and gates as they had not yet been installed. Such signal house would have been necessary equipment, only if and when such gates and lights were installed, and thereafter such signal house had been installed within the sight triangle.

3. The Defendant should have and could have installed the signal house at the subject railroad crossing after the lights and gates had been first installed. The Defendant should have and could have connected the signal house to the lights and gates and to the power source after the lights and gates had been installed and, while doing so, provided a flagman to warn approaching motorists of the presence of a train approaching the crossing to compensate for the obstruction to view caused by the location of the signal house. This installation

of the signal house should have been able to have been accomplished within a day's period of time barring any unforeseen circumstances.

4. The signal house clearly should not have been installed prior to the lights and gates being in place and ready for connection to such signal house and power source and capable of immediately providing protection of motorists whose vision would be distracted of an approaching train by the signal house. Such signal house could also have been installed in an area which would not have blocked the sight triangle.

5. The evidence I have reviewed in this case establishes: (1) the engineer did not activate the whistle; or (2) the whistle activation system or whistle was not operable; and/or (3) that if the whistle and whistle activation system was operable and activated, the whistle did not produce the minimum sound level required by the regulation.

6. The audio portion of the video recording aboard the subject locomotive reveals that the train whistle did not sound as required by state and federal law as the train crossed numerous crossings prior to reaching the subject crossing where the subject collision occurred. Therefore the train crew should have been aware that either (1) the engineer did not activate the whistle at a number of crossings before reaching the subject crossing and did not activate the whistle at the subject crossing, or (2) the whistle activation system or whistle was not operable and/or (3) that if the whistle activation system and whistle were operable and activated, the whistle did not produce the minimum sound level

required by Federal regulations, as the train crossed numerous crossings prior to reaching the subject crossing where the collision occurred. If the train whistle was not sounding due to malfunction of any equipment, including the whistle, this knowledge would have required the train crew to have stopped the train immediately and to have made arrangements for the whistle activation and/or whistle equipment to have been immediately repaired before the locomotive, which was the subject of the collision, proceeded. Failure to have ceased operation of such locomotive while such whistle activation equipment and/or whistle was malfunctioning constituted a breach of the generally recognized and accepted customary and usual practices and violation of Federal and State law set out more specifically elsewhere herein.

7. Proceeding in the face of a malfunction and/or not in compliance with Federal regulations is clearly reckless disregard and conscious indifference for the lives and safety of others and would be life threatening. If the whistle and the whistle activation equipment was operable, yet the engineer failed to activate the whistle over numerous crossings prior to the subject crossing, then the engineer was intentionally violating Federal and State law as set out elsewhere herein and intentionally endangering the lives and safety of others, and intentionally acting with conscious indifference for the lives and safety of others.

8. The locomotive horn or whistle must be sounded when the locomotive is approaching crossings in compliance with 49 C.F.R. 222.21 and 66 O.S. 126. It is clearly the law that railroad carriers may only operate trains that "are in

proper condition and safe to operate without unnecessary danger of personal injury" and have been inspected. 49 U.S.C. § 20701. A daily inspection is required for locomotives pursuant to 49 C.F.R. 229.21. During such inspections, it must be ensured that all equipment on such locomotive is in compliance and in proper repair. This would include the horn (whistle) on a locomotive.

9. As I stated in my expert report at pages 6-7 (Exhibit "B"), the Defendant's train was exceeding the maximum authorized speed for trains at the crossing where the subject collision occurred. The event recorder from the lead locomotive (UP 8130) shows that it was being operated at a speed of forty-two (42) m.p.h. at the time of the subject impact and had been operating at this speed for a period of time of approximately seventy-three (73) seconds. According to the Federal timetable speed limits for this particular train track, as set forth in 49 C.F.R. § 213.9, the maximum speed for freight trains at this location is forty (40) m.p.h., not forty-two (42) m.p.h. as the train's event recorder shows it was being operated, thus according to Defendant's own records, the train's speed exceeded the maximum speed authorized by federal law.

10. Additionally, I have reviewed the event recorder data produced by the Defendant and compared it to the visual information contained in the track image recorder ("TIR") to determine the stopping point of the locomotive. In an analysis of the video information on the TIR, it is easily determined by counting the number of frames between the two events that the locomotive moved for 835 frames or approximately 56 seconds after the impact with Mrs. Cornwell's vehicle

at East Flint Street. It is also visible in the TIR video that the locomotive moves past the old Delaware Crossing before coming to a complete stop

Comparing the elapsed time from the TIR with the event recorder data, the event recorder suggests a movement of 1,903 feet from the impact to stopping over 56 seconds. Comparing this distance to measurements taken from Google Earth, using visual references in the TIR video, the locomotive appears to come to a stop closer to 2,150 feet past the point of impact. This reveals an apparent error in the calibration of the event recorder of approximately 12% in the speed and distance calculations recorded on the event recorder.

Using this approximate, but apparent error in the distance and as such in the locomotive speed, calculations quickly show that the approximate speed of the train at the time it approached the subject collision site was closer to forty-seven (47) m.p.h. This is even further in excess of the maximum speed authorized by federal law.

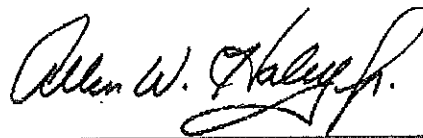
I performed an analysis of the speed of the train and closure time for the subject train beginning 112 seconds before impact when, according to the Defendant's event recorder information, the train speed increased from forty (40) m.p.h. to forty-one (41) m.p.h. and continued through the time at 73 seconds before impact when the speed increases to forty-two (42) m.p.h. Comparing the closing time on two scenarios, *first*, that the speed of the train was accurate as recorded on the event recorder and, *second*, using the speed that I believe the train was actually moving, forty-six (46) m.p.h. and forty-seven (47) m.p.h.,

respectively. Under the first scenario, had the train been moving at forty (40) m.p.h. in compliance with federal law, the locomotive would have reached the point of impact in scenario one approximately 4 seconds later and, in scenario two, almost 19 seconds later. Under either of these scenarios, had the Defendant's train not be violating the maximum speed limit set by federal law, there was more than sufficient time for Mrs. Cornwell's vehicle to have cleared the subject railroad track and the collision would not have occurred.

11. Operation of Defendant's train in excess of the maximum authorized speed for trains on this track at this location was a proximate cause of this collision and resulting death of Mrs. Cornwell. Defendant's violation of the maximum federal speed limit was a willful violation and demonstrates reckless indifference to the safety of the public who used or would use this crossing on the approach of this train and was life-threatening.

I declare, certify, verify and state under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Dated this 15th day of March, 2010.

A handwritten signature in cursive script, reading "Allen W. Haley, Jr.", written in black ink.

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Allen Haley, Jr.

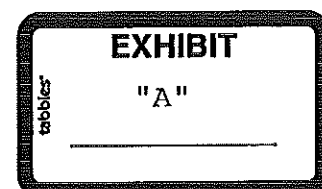


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## ALLEN W. HALEY JR.

### SUMMARY OF QUALIFICATIONS

- Over 35 years experience in railroad operations, transportation consulting, track and equipment maintenance, management, labor relations and in working with regulatory agencies.
- Has completed practical and formal training on railroad rules, federal regulations, accident investigation and railroad practices.
- Has developed training programs to train railroad employees working as train dispatchers, conductors, engineers, switchmen, track inspectors, track maintenance workers, and supervisors.
- Developed and presented training programs to a variety of railroads and rail served companies on Federal Regulations, railroad practices, railroad operations and rail safety.
- Developed training programs for railroad engineers and provides training and monitoring services as a Designated Supervisor of Locomotive Engineers for multiple shortline railroad clients.
- Experienced railroad manager with a sound knowledge of C.F.R. 49 Part 200, Federal Railroad Administration (FRA) Regulations, Association of American Railroads (AAR) standards and recommended practices, Hazardous Materials Regulations, railroad operating rules, railroad operating practices and railroad timetables.
- Skilled at accident and derailment investigation including inspection of track and equipment for compliance with federal regulations, railroad industry standards and recommended practices and in identifying defects with track or equipment with a causal tie to the accident.
- Railroad management experience including strategic planning, setting annual and capital budgets, training and development of managers and employees, developing and implementing cost controls and implementing revenue enhancement processes.
- A transportation professional capable of dealing with fast-paced or high-pressure projects which demand organizational skills, fostering team work, adherence to timetables, team results and attaining goals.
- Able to make solid decisions backed up by his knowledge, training and by years of experience in the railroad industry.





## **PROFESSIONAL EXPERIENCE**

### **1973 – 1990 Southern Pacific Railroad**

- Train Dispatcher
  - Regional Transportation Manager – Locomotives
  - Chief Train Dispatcher
  - Assistant Regional Manager of Operations
  - Regional Manager of Operations
- 
- During his 17 years with the Southern Pacific, Allen served in numerous operations positions. In his various capacities in the transportation and operating department of the Southern Pacific, he provided analytical and planning support for Vice-Presidents, General Managers, and Superintendents in the management of the railroad.
  - While at the Southern Pacific, Allen began his training as a railroad manager and expanded his knowledge of railroad rules and operating practices.

### **1990 – 1996 A C E Consultants**

- Principal and Consultant
- 
- Analyzed proposed operating plans during rail mergers to determine their impact on the client's operations.
  - Prepared verified statements and provided testimony on operating issues and operating plans in recent mergers.
  - Studied dispatching procedures and practices for several carriers to assess the need for new protocols and procedures.
  - Developed a course of rules and operating practices training for new train and engine crews.
  - Assisted a regional railroad in converting to the General Code of Operating Rules, including the development of a training program, preparing rulebooks, a new timetable and teaching rules classes.
  - Conducted safety audits and operating practices testing for a regional carrier to assist in their efforts to improve their safety performance.
  - Prepared an operating plan to be used before the Surface Transportation Board during a merger proceeding.

### **1996 – 2000 The Texas Mexican Railway**

- Superintendent of Transportation
- General Manager
- Improved the safety record of the company to finish in first place for Class III railroads in the Harriman Safety Award for 1996.
- Continued emphasis on safety and training to complete 1997 in third place in the Harriman Safety Awards for Class III railroads.
- Continued the focus on safety in the rail operations of the company to finish in second place for Class III railroads in the Harriman Safety Award in 1998.
- Worked with the FRA to improve the Company's compliance record by increasing the levels of training and testing.
- Member of the team responsible for The Texas Mexican Railway Company being named the Regional Railroad of the Year for 1998.
- Worked with the FRA to implement the Safety Assurance & Compliance Program on the Tex-Mex. Represented the company as the senior management member on the oversight committee.
- Worked with the FRA to revise and improve the Locomotive Engineer Certification and Field Observation Testing programs.
- Assisted in the development of the plan to consolidate the operations of The Texas Mexican Railway Company with TFM and KCS.
- Directed the efforts of the Engineering and MW Department in the development of capital budgets. Lead the team who developed a sixty-five million dollar capital improvement plans for the railroad.
- Worked as company liaison with the city-planning agency to develop a comprehensive transportation plan and grade crossing consolidation plan for the city of Laredo, Texas.
- Senior member of the team who responded to accidents involving trains or employees. Responsible for investigating accidents to determine cause, instituting corrective actions, clearing derailment sites and coordinating with contractors, federal and state agencies.
- Developed and trained new employees on railroad operating rules and railroad operating practices.
- Trained operating managers on accident investigation, FRA Regulations and rail operations management.
- Directed the operation of railroad switching yards and over the road train operations.
- Directed the operation of contract railcar repair operations for the railroad including management of re-billable repairs and AAR repairs.
- Conducted safety audits and facility inspections.

## **2000 - Present    *Strategic Transportation Services***

### **➤ Principal & Senior Rail Consultant**

- Developed railroad rules program and rail yard safety training program for a companies working in chemical plants and industrial locations served by railroads. Conducted classroom training for employees and provided hands-on field training in railroad rules and operating practices.
- Assisted an economic development company in the study of rail car storage and storage in transit requirements.
- Assessed warehouse and logistical service demands in Texas for a client seeking locations for an expansion.
- Assessed border infrastructure and cross-border traffic patterns to determine feasibility of warehouse and logistical expansion plans.
- Developed and conducted classroom training on rail safety and contractor safety for work near railroad tracks and on railroad property.
- Developed a training program and provided railroad safety and roadway worker protection training.
- Part of a team involved in the evaluation of locomotive and signal repair costs as the result of a grade crossing accident.
- Conducted safety audits for a company providing switching services inside a major chemical plant and inside other rail served industries.
- Developed a General Code of Operating Rules (GCOR) training and cutover program for a railroad and provided classroom training.
- Provided expert testimony supporting a shipper's claim to recover losses resulting from a rail carriers failure to provide consistent service levels, related to reasonable dispatch and common carrier obligations.
- Conducted accident investigation and analysis for clients to determine cause (s) of accidents involving a railcar and / or railroad operations. Recommended corrective actions and assisted with implementing corrective actions.
- Provided litigation support and on grade crossing accidents.
- Provided litigation support on haz-mat regulations.
- Provided litigation support on track safety standards, maintenance and inspection practices.
- Provided litigation support for cases involving train derailment on an industry owned track.
- Assisted in litigation and in mediation pertaining to railcar maintenance requirements and standards.

- Provided litigation support involving railroad losses and damage claims due to derailments. Evaluated railroad claims and charges for repairs of railcars, track and locomotives.
- Provided litigation support on railroad loss of use claims for locomotives involved in accidents.
- Provided litigation support on AAR Open Top Loading Standards related to derailments.
- Provided litigation support on railroad derailment and accident investigation and determination of cause.
- Provided litigation support pertaining to control of access to railroad right of way and actions to minimize or eliminate unauthorized access to railroad facilities.
- Assisted in litigation related to FRA Regulations, AAR Recommended Practices and Hazardous Materials Regulations and tank car inspection and shipping practices.
- Conducted a rail safety audit to identify operating and physical plant problems that were affecting safety performance and rail efficiency.
- Assisted a company in assessing repair costs claimed by a railroad as a result of an accident on railroad property.
- Developed a training program and rail yard safety program for the qualification of rail yard switching employees.
- Developed a rail yard operating practices program to assist a company in eliminating derailments and accidents.
- Developed, prepared and presented a training program for the Marine Corp Logistics Base in Barstow, California on rail safety, railroad operating rules (GCOR), track inspection and rail accident investigation.
- Conducted a rail car switching, unloading and reloading audit for a company providing logistical and mixing services for automotive transportation.
- Developed a track safety standard program and companion training program for an industrial location.
- Developed numerous railroad safety and railroad operating training program including providing classroom and in-field training for industrial switching and shortline railroads.
- Assisted in-plant railroad as a liaison with the FRA representatives on issues related to certification of engineers, locomotive safety standards and waiver of equipment, accident reporting and Drug & Alcohol control regulations.
- Developed and conducted a training and certification program for locomotive engineers in shortline service and served as a designated supervisor of engineers.

## **EXTENDED TRANSPORTATION TRAINING**

- **International Freight Forwarding**  
Harris County Community College
- **Accident Investigation Training**  
Kansas City Southern Railroad
- **Railroad Track Maintenance**  
University of Wisconsin, Madison, WI.
- **Hazardous Materials Training**  
Bureau of Explosives, St. Louis, MO.
- **Hazardous Materials Refresher**  
FEMA / DOT, Houston, TX.
- **Hazardous Materials Regulations**  
ASLRRA / FRA, Corpus Christi, TX.
- **OSHA Safety Training**  
HACSC, Pasadena, TX
- **FRA Track Safety Standards**  
ASLRRA / FRA, Corpus Christi, TX.
- **FRA Operating Practices**  
ASLRRA / FRA, Corpus Christi, TX.
- **FRA Operating Practices**  
ASLRRA / FRA, Dallas, TX.
- **FRA Mechanical Regulations**  
ASLRRA / FRA, Dallas, TX.
- **FRA Freight Car Safety Regulations**  
ASLRRA / FRA, Brownsville, TX.
- **FRA Track Safety Standards**  
ASLRRA / FRA, Brownsville, TX.
- **Railroad Operating Practices**  
University of Wisconsin, Madison, WI.
- **FRA Mechanical Regulations**  
ASLRRA/FRA, Brownsville, TX.

- **FRA Operating Practices Part 219**  
ASLRRA/FRA, Brownsville, TX.
- **FRA Locomotive Engineer Certification**  
ASLRRA/FRA, Brownsville, TX.

**United States District Court  
Northern District of Oklahoma**

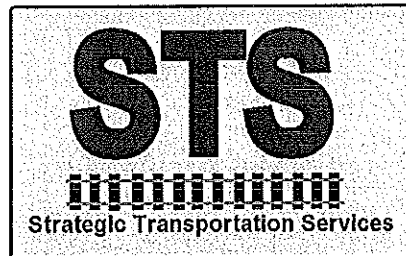
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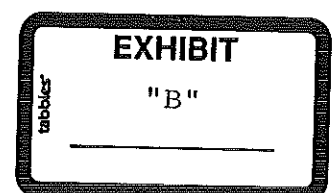
**Expert Report**

**Of**

**Allen W. Haley Jr.  
November 18, 2009**



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## **I. Background**

I am Allen Haley, Principal, and Senior Rail Consultant of Strategic Transportation Services, a consulting firm specializing in issues related to railroads and rail transportation. My background is one of over 36 years in the railroad industry either as a railroad employee or as a consultant.

While working as a railroad employee, my duties have included supervision and management of the maintenance of way, supervision of train and switching operations, the hiring and training of employees, safety, locomotive engineer certification and accident investigation. Both as a railroad employee and as a consultant, I have investigated rail accidents and have conducted inspections of the track and equipment to determine the cause of derailments or accidents. In my investigation of many accidents, I have had the opportunity to use my knowledge of railroad rules, regulations, railroad operating practices, track safety standards, track maintenance practices and inspection procedures to determine accident causes.

As a railroad manager it was my responsibility to know Federal Railroad Administration (FRA) regulations, train my managers on the application of these regulations and ensure that these regulations were complied with. Additional duties included working with the FRA as the senior rail member of the railroad's Safety Assurance and Compliance Program (SACP) committee for our railroad. As the senior rail member it was my responsibility to work with the FRA inspectors and administrators to develop action plans that addressed the concerns of the FRA related to railroad safety, including track inspection and maintenance issues. As a railroad employee and as a consultant I have been called upon to teach, to give advice on the application of, and assist in compliance actions pertaining to regulations of the FRA.

Unlike lay witnesses or the general public, I have a knowledge and expertise in areas related to railroads and federal regulations such as;

Federal Regulations C.F.R 49 Part 200  
General Code Of Operating Rules (GCOR)  
Railroad Safety Rules  
Railroad Airbrake & Train Handling Rules  
Timetable & Timetable Special Instructions  
Railroad Accident Investigation & Cause Determination

Additionally, I currently train locomotive engineers on the rules and operation of locomotives both as a classroom instructor and in hands on training.

In addition to managing the operation of freight trains, I have been the management employee responsible for the investigation of accidents involving those trains. During my railroad career I have participated in or personally investigated numerous train accidents. The experiences that I gained as an accident investigator have been honed over many years and have been called upon by others, including now as a consultant, to determine causes (s) of accidents and to prescribe remedial actions. My experiences and investigation of many accidents, like the one at the heart of this case, can be of assistance to the jury as they review the factual evidence presented and resolve conflicts in the evidence.

In one case a Federal Court Judge limited my testimony in an affidavit for consideration in response to a motion for summary judgment. Before the Court made a ruling and issued its order, the attorneys who represented the Plaintiff and whom had sought the affidavit from me in support of their opposition to the motion, offered **NO** demonstration of my qualifications or methodology other than to simply say "he is qualified because he has experience". The Plaintiff's Counsel made no attempt to show the Court where this experience came from, the extent of this experience, how it would be used to offer opinions, nor how this testimony would benefit or be of any use to the trier of facts.

It is understandable to me today how the Court could reach their decision when they were offered no tangible evidence as to why I was qualified other than to assert that I was qualified simply by having worked for a railroad. For this reason, I offer now my qualifications, the background of my experiences in the downloading, interpretation and use of locomotive event recorder data.

Since this case, there has been at least two other case where a motion to strike my testimony has been heard by a Court related to event recorder data, this court denied the Defendant's motion and found me qualified to offer expert opinions pertaining to event recorder data. Since the case where my affidavit was limited, to the best of my knowledge, no court, including one case in Federal Court, has limited or stricken my testimony on issues related to event recorders.

I have had practical training, consistent with the normal and traditional railroad training programs, in the downloading and reading of locomotive event recorder data. I have additionally and further had the life experiences that allowed me to compare actual known locomotive operations against the data shown on that locomotive event recorder, which is more valuable and complete than any classroom training that can be provided by the companies who provide event recorder software. I additionally have had the experience that can not be gained through classroom training, to actually download locomotive event recorders, utilize the event recorder reader software to analyze the data and to interpret and use this interpretation in determining accident cause. My experiences in the actual and practical use of event recorders in the railroad industry far exceeds the basic training that is typically provided by event recorder suppliers to individual railroad employees or retained consultants.

During the investigation of accidents as a railroad employee, I frequently used data from locomotive event recorders to evaluate the statements of the crews involved in the accident and to reconstruct the events that preceded the accident. I have used information from locomotive event recorders to assist me in my investigation. I am familiar with the Federal Regulations pertaining to the requirements of event recorders on locomotives and I am familiar with their operations, their use and railroad practices and procedures relating to the downloading of and analysis of event recorder data.

As it pertains to this case, I will utilize information from discovery related to the authorized speed of the train involved in the accident of July 16, 2008, track chart information, railroad timetables, special instructions, track bulletins, general orders, eye-witness statements and information about the stopping location of locomotive UP 8130 to assess the locomotive engineers operation of the train. This will include handling of the throttle, use of the train brakes and sounding of the locomotive horn. My analysis will involve the correlation of these events as they relate to proximity to the crossing and to determine compliance with applicable railroad rules or Federal Regulations.

As a consultant I have just begun to experience the railroad's use of the Track Image Recorder, "TIR" investigation of grade crossing accidents. According to a Union Pacific (UP) press release in January 2008 eighty-five percent of their locomotives were equipped with the TIR system, other railroads have been much slower to equip and implement this system. As such, my exposure to TIR video has been confined to a period less than my experience and exposure to event recorders. Unlike event recorders which require a certain degree of training and experience to read or interpret the data that is contained in the TIR's provide video and audio which requires no special skills to read the data. Instead, an experienced railroader who knows and understand operating rules and has experienced the sights and sounds from a locomotive cab, can view and listen to the TIR and know, understand and if necessary interpret the scenes and sounds that are recorded by the TIR.

My experiences in the railroad industry as well as formal and practical training that I have received provide me with the basis and knowledge for offering the expert opinions set forth in this report.

My qualifications are further detailed in my resume which was attached to this report as Appendix A.

Cases in which I have offered testimony, my Rule 26 listing, are included in Appendix B of this report.

## **II. Assignment**

The firm of Merritt & Associates, P.C. retained my company to review documents and other information pertaining to an accident that occurred on July 16, 2008 at or near to the East Flint Street Crossing in Vinita, Oklahoma.

My review will include an assessment of the rules, regulations, and practices of the UP and within the railroad industry as it relates to the operation of trains over railroad highway crossings at grade, including the requirements for the sounding of locomotive horn in advance of the crossing.

I will offer an opinion as to the quality or standard of care that UP practiced, as the UP train with lead locomotive UP 8130 approached East Flint Street Crossing on July 16, 2008, to provide warning to vehicular traffic that would approach and use this crossing during the approach of this train.

Finally, I will offer an expert opinion as to the audibility of the horn on locomotive UP 8130 as it approached East Flint Street Crossing on July 16, 2008.

For this assignment, my rate of compensations is \$175.00 per hour for general consultation, document review, report preparation and \$200.00 per hour for time consumed preparing for and offering testimony at trial or deposition.

### **III. Data Reviewed**

I have reviewed these documents in preparation for submitting this report:

- Locomotive Event Recorder Data for UP 8130.
- Vinita Police Department Report
- TIR Video from Locomotive UP 8130
- Affidavit of Garrett Sheckels
- Affidavit of Karen Davis
- General Code of Operating Rules (GCOR)
- Code of Federal Regulations (CFR) 49 Part 222
- CFR 49 Part 229
- May 18, 2005 BNSF Railroad Press Release on TIR
- January 28, 2008 UP Railroad Press Release on TIR
- May 16, 2005 UP Letter & Talking Point Memo related to Track Image Recorders (TIR) on UP.
- UP Airbrake and Train Handling Rules
- UP Timetable
- Locomotive Characteristics & Photographs of UP 8130
- DOT "Highway-Rail Grade Crossing Accident/Incident Report for crossing 413521H, East Flint Street
- DOT "Crossing Inventory Information" for crossing 413521H, East Flint Street
- Google Earth, Satellite Views of UP railroad from a point north of East Flint Street to the stopping point of Locomotive UP 8130 just south of Delaware Street
- "Railroad-Highway Grade Crossing Handbook"
- "Compilation of State Laws and Regulations on Matters Affecting Highway-Rail Crossings", Third Edition
- "Guidance On Traffic Control Devices At Highway-Rail Grade Crossings"
- Photographs and other documents related to the subject accident and railroad crossing.

#### **IV. Opinions**

Based on the information that I have reviewed, the opinions that follow are rendered to a reasonable degree of certainty. To the extent that additional information becomes available from discovery or from depositions, I reserve the right to modify these opinions or to formulate new opinions from that additional information.

##### **1. UP failed to mitigate hazardous conditions that existed at East Flint Street Crossing, DOT No. 413521H on July 16, 2008.**

Based on my review of documents including photographs and TIR videos of the train approaching and operating over the subject railroad crossing and my experience in the railroad industry it is my opinion that hazardous conditions existed at the East Flint Street Crossing that contributed to or caused the accident of July 16, 2008.

The hazardous conditions include sight lines and visibility for a motorist approaching the crossing in an eastward direction to detect trains moving at up to forty (40) miles per hour (MPH) from the north are restricted. Vegetation located north of the crossing conceals an approaching train as vehicular traffic approaches the grade crossing. On July 16, 2008 the southbound UP train appears to clear the vegetation where the locomotive should be visible to a car approaching the crossing while the automobile is fifty feet from the crossing and the locomotive is only eight seconds from the crossing. A railroad signal cases located alongside the track further obstruct the driver's vision as they continue to approach the grade crossing and as the locomotive on the train of July 16, 2008 continued and moved to a point that was approximately two seconds from the grade crossing.

Hazardous conditions such as these are discussed in the *Railroad Highway Grade Crossing Handbook* and are used in make a determination of the types of improvements necessary to increase highway – rail grade crossing safety.

The *Railroad Highway Grade Crossing Handbook* discusses hazardous conditions such as these, it discusses these conditions and their affect by stating:

**“Obstruction of the view of train approaching.  
Roadway geometrics diverting driver attention.  
Availability of information for proper stop and go decisions by the driver.  
Opportunity for evasive action by the driver.”**

Changes or improvements, which are common in the railroad industry, and which would be normal and reasonable for a railroad company who is exercising responsible care for the traveling public could have include:

- 1) Clearing vegetation and/or relocating obstructions in the driver's sight triangle to allow drivers to detect approaching trains with sufficient time to stop at the required point in advance of the track.
- 2) Installation of a stop sign.
- 3) Installation of active warning devices.

It is my opinion that UP was negligent to the safety of the public and to the users of the East Flint Street grade crossing when they continued to operate trains over this hazardous crossing without taking steps to eliminate or mitigate the hazardous conditions. The negligent practices of the UP at this location were a reckless disregard and willful indifference for the lives and safety of the public and created life threatening conditions.

**2. On July 16, 2008, the UP train with lead locomotive UP 8130 approaching the East Flint Crossing was exceeding the maximum authorized speed for trains at this location.**

UP rules contained in the General Code of Operating Rules require that train and engine crews comply with the maximum speeds allowed for their train over the specific areas of the railroad where they are operating.

***"6.31 Maximum Authorized Speed***

***Conductors and engineers are jointly responsible for knowing and not exceeding the maximum authorized speed for their train.***

***Passenger speed is applicable only to trains consisting entirely of passenger equipment.***

***When possible, crew members must notify the train dispatcher promptly of any condition that will delay or prevent their train from making the usual speed."***

Event recorder data from locomotive UP 8130 on the UP train involved in the subject accident of July 16, 2008 shows that the Engineer of this train was operating the train at a speed of forty-two (42) miles per hour at the time of impact and had been at this speed for a period of approximately seventy-three (73) seconds. The maximum authorized speed for freight trains at this location is forty (40) MPH, not forty-two (42) MPH as the train was being operated.

It is my opinion that Engineer of the UP train involved in the accident of July 16, 2008 was violating railroad rules contained in the GCOR as well as in railroad timetables and possibly General Orders or Track Bulletins as he exceeded the maximum authorized speed for his train.



Additionally, I have reviewed the event recorder data and compared it to the visual information contained in the TIR to determine the stopping point of the locomotive. In analysis of the video information on the TIR, it is easily determined by counting the number of frames between two events that the locomotive moved for eight hundred and thirty-five frames (835) or approximately fifty-six (56) seconds after the impact at East Flint Street. It is further visible in the TIR video that the locomotive moves past the old Delaware Crossing before coming to a complete stop.

Comparing the elapsed time from the TIR with the event recorder data we find that the event recorder shows a movement of 1,903 feet from impact to stopping over the fifty-six (56) seconds. Comparing this distance to measurements taken off of Google Earth, using visual references in the TIR video, we find instead that the locomotive appears to come to a complete stop closer to 2,150 feet past the point of impact. This reveals an apparent error in the calibration of the event recorder of approximately twelve (12) percent in the speed and distance calculations recorded on the event recorder. This calibration error likely can be attributed to an incorrect wheel measurement entry into the event recorder playback software, which I hope to confirm through future depositions or discovery.

Using this approximate but apparent error in the distance and as such in the locomotive speed, calculations quickly show that the approximate speed of the train on July 16, 2008 as it approached and operated over East Flint Street was closer to forty-seven (47) miles per hour. This would have been even further in excess of the maximum authorized speed for trains in this location.

I performed an analysis of the speed of the train and closure time for this UP train beginning one-hundred twelve (112) seconds before impact when the train speed increased from forty (40) MPH to forty-one (41) MPH and continued through the time at seventy-three (73) seconds from impact when the speed increased to forty-two (42) MPH. Comparing the closing time on two scenarios, first that the speed of the train was accurate as recorded on the event recorder and second using the speed that in my opinion the train as actually moving, forty-six (46) and forty-seven (47) MPH respectively.

Under the first scenario, had the train been instead moving at forty (40) MPH in compliance with UP rules and regulations, as well as in compliance with the speed for trains required in 49 CFR Part 213 Track Safety Standards, the locomotive would have reached the point of impact in scenario one approximately four (4) seconds later and in scenario two almost nineteen (19) seconds later.

It is my opinion that the engineer of the UP train with lead unit UP 8130, in operating the train in excess of the maximum authorized speed for trains at the location, in violation of UP rules and Federal Regulations was a proximate cause of the accident of July 16, 2008. It is further my opinion that the operation of the UP train in excess of published and known rules restricting the speed was a willful violation and was indifferent to the safety of the train and the public who used or would use this crossing on the approach of the this train.



3. It is apparent, based upon the sound recording on the TIR recorder that the whistle of UP 8130 either failed to sound or may have been at a decibel level which made it undetectable.

I have viewed and listened to a copy of the TIR videotape that was recorded by the device on locomotive UP 8130 of the train which was involved in the accident of July 16, 2008. This videotape appears to have recorded both visually and in sound the movement of the subject train for a number of miles before it arrived at and at the time it arrived at the subject accident crossing.

The TIR recorded the video and audio as the train moves over the tracks from the beginning of this recording, through the impact at East Flint Street and finally continuing southward until it came to a stop about fifty-six (56) seconds later and continuing on for several minutes later. During this time, I can detect sounds that I am familiar with through my years of experience riding locomotives of trains. It is easily heard in the video the passage of the locomotive over track structures such as switches, frogs and trestles. Additionally, the sounds of the locomotive bell pneumatic control valve on the control stand of the locomotive and the sound of the front door closing on the locomotive can be heard. The crash between the train and the Cornwell vehicle can also be heard on the sound portion of video.

In the numerous times that I have listened to this video, no whistle is heard on the sound portion of the video recording for the time period the train approached the subject crossing where the accident occurred. Further, no whistle can be heard to have sounded on the sound portion of the video recording as the train approached a number of crossings prior to and after the subject accident crossing.

In my experience in the railroad industry, as well as my review of other TIR recordings while working as a retained expert, I have always been able to detect the sound of the locomotive whistle while in the cab of the locomotive and on other TIR recordings.

The locomotive horn has specific sound standards which are required by the Federal Railroad Administration (FRA). The requirements for the locomotive horn are contained in 49 CFR Part 229.129, which states:

***"§ 229.129 Locomotive horn.***

***(a) Each lead locomotive shall be equipped with a locomotive horn that produces a minimum sound level of 96 dB(A) and a maximum sound level of 110 dB(A) at 100 feet forward of the locomotive in its direction of travel. The locomotive horn shall be arranged so that it can be conveniently operated from the engineer's usual position during operation of the locomotive."***

Locomotive UP 8130 is classified as an SD9043MAC which was manufactured in April 1997. It's overall length eighty (80) feet, with the front and rear facing horns located near the center of the locomotive, thus forty (40) feet or less from the locomotive cab. Based upon my railroad experience, both in occupying cabs of locomotives that are being operated at track speeds when the horn is sounded, and on my background and experience in mechanical compliance with FRA regulations, it is my opinion that if the horn of UP 8130 was sounded and the horn was operating within normal parameters it would have been heard in the cab of the locomotive and on the TIR audio.

Based upon the absence of a train whistle in the audio of the TIR, it is my opinion that the whistle on locomotive UP 8130 was not detectable by the vehicular traffic at the East Flint Crossing, including the decedent as she approached the grade crossing.

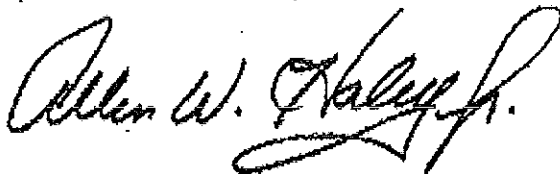
It is also my opinion that the witness statements, which have not been corroborated by other methods, and which are suspect and conflicted due to the conflicting unbiased audio information contained in the audio portion of the TIR, are probably erroneous and based upon some assumptions made by these witnesses.

Additionally, it is possible that based on the proximity of these ear-shot witnesses that the sound they heard could have been heard after the impact occurred. Also, based on their proximity to the train at the time that the accident occurred they could have heard other sounds such as the train brakes or the impact sounds themselves and mistakenly presumed them to be the train whistle.

Finally, we are unaware of the distance and bearing between these witnesses and the locomotive at the time of their alleged hearing of the locomotive whistle; it is possible that a locomotive whistle, if heard by them, may still not have been sufficiently loud enough to meet the 96 db requirement nor to be recorded on the TIR. As an example, if the forward facing horn on the locomotive was not sounding at all or at a very low level, but the rear facing horn was sounding as required, they may have simply detected the sound from the rear horn as it passed their locations. As such, they would have been able to hear a whistle, not knowing that it was past them, while the TIR recorder to the front of the locomotive and the decedent would not have heard the locomotive whistle as the train approached East Flint Street crossing.

It is my opinion that UP acted in a manner not consistent with a reasonable standard of care and with a negligent disregard for the safety of the public when they operated locomotive UP 8130 on July 16, 2008 as the lead locomotive of a train when the horn may not have been detectable in advance of the train as required by the regulations and possibly in violation of Federal Regulations related to the horn requirement for lead locomotives on trains.

Prepared and submitted by:

A handwritten signature in black ink, reading "Allen W. Haley Jr." with a stylized, cursive script.

Allen W. Haley Jr.  
November 18, 2009

## **Appendix A**

## Testimony

<u>Case</u>	<u>Court</u>	<u>Cause No.</u>	<u>Firm Attorney</u>	<u>Date</u>	<u>Type of Testimony</u>
Vickie West v. Nalco Chemical, Et. Al.	District Court of Jefferson County Texas 60th Judicial District	No. B163270	Scott Hooper	04/25/01	Deposition
Novus Int. v. UPRR	239th Judicial District Court, Brazoria County	No. 5510-JG98	Ken Breitbeil - McFall, Sherwood & Breitbeil	09/28/01	Deposition
Jarrod Wooley v. P&L RR	McCracken Country Circuit Court	No. 00-CI-00603	Edward Box - Bradley & Freed	02/21/02	Deposition
James Goldy & Laura Goldy v. BNSF RR, Et. Al.	Superior Court in and for the State of California, County of San Bernardino	SCVSS 57684	Jenifer Kienle - Lewis, D'Amato, Brisbois & Bisgaard	03/27/02	Deposition
ARSCO v. NS Railroad	United States District Court Western District of New York	00-CV-6535L(F)	Paul Yesawich - Harris Beach	03/12/03	Deposition
Day v. FMC and UP Railroad	United States District Court District of Nevada	CV-S-02-0788-RLH-RJJ	Hugh Gottschalk - Wheeler, Trigg & Kennedy	04/23/03	Deposition
City of Muskogee v. UP Railroad	Corporation Commission of Oklahoma		Mark Caywood	07/08/03	Deposition
Joe Hammond, Et. Al. v. CSX Transportation	United States District Court Southern District of West Virginia Huntington Division	3001037	David White - Masters & Taylor	09/17/03	Deposition
Pallet Recycle of Texas v. Union Pacific Railroad Company	333rd Judicial District Court, Harris County Texas	2002-36542	Steve Mostyn - The Mostyn Law Firm	10/06/03	Deposition

<u>Case</u>	<u>Court</u>	<u>Cause No.</u>	<u>Firm Attorney</u>	<u>Date</u>	<u>Type of Testimony</u>
Thomas Herber, Et. Al. v. Union Pacific Railroad Company v. Brian Kurtz Trucking	United States District Court For the District of New Mexico	No. CIV-02-0577 BB/RHS ACE	Neal Speer - Civerolo, Gralow, Hill & Curtis	10/17/03	Deposition
Iowa Chicago & Eastern Railroad Corp. v. Payload, Inc., DBA Denny Wessels, Inc, Et. Al.	U.S. District Court Northern District of Iowa Central Division	No. C03-3017MWB	Joe Van Winkle - Lewis, Webster, Johnson & Van Winkle	01/09/04	Deposition
Arroyo v. Norfolk Southern Railway Co.	Cook Co. (IL) Circuit Court	No. 01 L 7315	Jeffrey C. Kasten - Robert N. Waddington & Associates	02/10/04	Deposition
Esperanza Acosta v. Union Pacific Railroad Company, et. Al.	District Court of El Paso County, Texas 168th Judicial District Court	No. 2002-5570	J. Roberto Oaxaca - Oaxaca Bernal & Associates	03/22/04	Deposition
Fort Bend County v. Burlington Northern & Santa Fe Railroad, Et. Al.	County Court at Law No. 3 Fort Bend County, Texas	No. 17181	David Jenkins Chamberlain, Hrdlicka, White, Williams & Martin	06/09/04	Deposition
Fort Bend County v. Burlington Northern & Santa Fe Railroad, Et. Al.	County Court at Law No. 3 Fort Bend County, Texas	No. 17181	David Jenkins Chamberlain, Hrdlicka, White, Williams & Martin	06/21/04	Trial
Celanese Ltd. V. Old World Industries Ltd	Harris County, Texas	No. 70 Y 198 00757 02	Dean Pamphillis Kasowitz, Benson, Torres & Friedman	08/28/04	Arbitration
Robert Thomas v. The Kansas City Southern Railway Company v. 84 Lumber, et. al.	U.S. District Court For the Eastern District of Texas, Marshall Division	No. 2-03CV-359	Ms. Keena S. Greyling - Dodge, Anderson, Jones, Bezney & Gilliam, P.C.	12/02/04	Deposition
Jesse Perez v. The Port Terminal Railroad Assoc., Cargill Inc., and Econo-Rail	269th Judicial District Court of Harris County Texas	No. 2003-57381	Mr. George Nalley - Law Offices of George Nalley	01/07/05	Deposition

			Firm	Type of	
Case	Court	Cause No.	Attorney	Date	Testimony
Steven A. Saunders v. Harsco Corporation	U.S. District Court District of Nevada	No. CV-S-04-0956-JCM-LRL	Mr. Joel D. Odou - Wood Smith Henning & Berman L.L.P.	01/18/05	Deposition
Jose M. Torres, et al v. Union Pacific Railroad and David Onate	346th Judicial District Court of El Paso County Texas	No. 2003-1625	Mr. James Scherr - Scherr, Legate & Ehrlich	02/04/05	Deposition
Salvador Clavel v. The Texas Mexican Railway	229th Judicial District Court of Jim Hogg County Texas	No. CC-04-55	Mr. Daniel Kustoff - Lang & Kustoff	03/31/05	Deposition
Luz Gonzalez, et. al. v. Union Pacific Railroad Company and Does 1 through 100	Superior Court of the State of California for the County of Los Angeles - Central District	No. BC 302834	Mr. Arnoldo Casillas - Moreno, Becerra, Guerrero & Casillas	04/11/05	Deposition
John E. Simon v. Kansas City Southern Railway	District Court of Jefferson County, Texas 60th Judicial District	No. B-170,605	Mr. Steven Barkley, Law Offices of Steven Barkley	4/26/2005	Deposition
Kansas City Southern Railway Company v. Jerry Johnson and ABC Employer	United States District Court Middle District of Louisiana	No. 3-628, Section C, Magistrate 2	Mr. Keith Giardina, Law Offices of Keith Giardina	6/1/2005	Deposition
Luz Gonzalez, et. al. v. Union Pacific Railroad Company and Does 1 through 100	Superior Court of the State of California for the County of Los Angeles - Central District	No. BC 302834	Mr. Arnoldo Casillas - Moreno, Becerra, Guerrero & Casillas	06/20/05	Trial
Jimmy McElroy, et. al. v. Union Pacific Corporation, et. al.	Circuit Court of Tennessee, Thirtieth Judicial District at Memphis	No. CT-000468-02 Div 7	Mr. Bruce Kramer, Borod & Kramer, P.C.	8/3/2005	Deposition
Jose M. Torres, et al v. Union Pacific Railroad and David Onate	346th Judicial District Court of El Paso County Texas	No. 2003-1625	Mr. James Scherr - Scherr, Legate & Ehrlich	08/26/05	Trial

<u>Case</u>	<u>Court</u>	<u>Cause No.</u>	<u>Firm Attorney</u>	<u>Date</u>	<u>Type of Testimony</u>
Jimmy McElroy, et. al. v. Union Pacific Corporation, et. al.	Circuit Court of Tennessee, Thirtieth Judicial District at Memphis	No. CT-000468-02 Div 7	Mr. Bruce Kramer, Borod & Kramer, P.C.	11/2/2005	Deposition
Union Pacific Railroad Corporation vs. NACME Steel Processing	Circuit Court of Cook County, County Department, Chancery Division	No. 03 CH 13971	Mr. Daniel E. Morrison, Sachnoff & Weaver, LTD.	6/13/2006	Deposition
Union Pacific Railroad Corporation vs. Schaeffer Industries	United States District Court Central Division District of Utah	No. 2:03CV-0263DAK	Mr. John Snow, VanCott, Bagley, Cornwall & McCarthy	8/28/2006	Deposition
Marilee Stine vs. CSX Transportation, Inc.	United States District Court Southern District of Indiana Indianapolis Division	No. 04-716-DGW	Mr. Charles Armbruster, The Lakin Law Firm	8/30/2006	Deposition
New Process Steel, L. P. vs. Union Pacific Railroad	United States District Court Houston Division Southern District of Texas	No. H-98-4075	Mr. Warren Wills, Richie & Gueringer, P.C	10/6/2006	Deposition
Association of American Railroads, BNSF Railway Company & Union Pacific Railroad Company vs. South Coast Air Quality Management District	United States District Court Central District of California	No. CV06-1416 JFW (PLAX)	Mr. Brian O'Neill, Jones Day	10/18/2006	Deposition



<u>Case</u>	<u>Court</u>	<u>Cause No.</u>	<u>Firm Attorney</u>	<u>Date</u>	<u>Type of Testimony</u>
Association of American Railroads, BNSF Railway Company & Union Pacific Railroad Company vs. South Coast Air Quality Management District	United States District Court Central District of California	No. CV06-1416 JFW (PLAX)	Mr. Brian O'Neill, Jones Day	11/30/2006	Trial
Eric and Kimberly Vigil, and Juan and Josie Moya vs. Burlington Northern and Santa Fe Railway Co. and The National Railroad Passenger Corp., a/k/a AMTRAK	United States District Court For The District of New Mexico	No. 06-CV-00212	Mr. James Scherr - Scherr, Legate & Ehrlich and Mr. Angel Saenz - Saenz & Torres	03/21/07	Deposition
Deyanira Gallegos Tapia vs. Union Pacific Railroad Company	United States District Court Brownsville Division Southern District of Texas	No. 1:06-CV-00090	Mr. Ernest Garcia - Rosenthal & Watson	6/8/2007	Deposition
Vanessa Solomon vs. Burlington Northern & Santa Fe Railway Company	240th Judicial District Court Fort Bend County	No. 03-CV-133384	Mr. Jermaine Thomas - Barnes & Turner	7/2/2007	Deposition
Severiano Garcia vs. Burlington Northern And Santa Fe Railway Company, Dona Ana County, and New Mexico State Highway and Transportation Dept.	Third Judicial District Court of Dona Ana State of New Mexico	No. CV-2005-1728	Mr. James Scherr - Scherr Legette & Ehrlich and Mr. Angel Saenz - Saenz & Torres	8/22/2007	Deposition

<u>Case</u>	<u>Court</u>	<u>Cause No.</u>	<u>Firm Attorney</u>	<u>Date</u>	<u>Type of Testimony</u>
James Paul Yanez vs. Burlington Northern and Santa Fe Railway Company, Martin Luley, Fernando Arredando, Daniel Cintas, Michael A Ortega, II, Schwerman Trucking Company, Tre-Pol, Inc., Helen Susan Coles, Trustee for The Estate of Otis C. Coles, Deceased and On Behalf of the Coles Estates, Servi-Gas a/k/a Heritage Propane, Ltd. And Ikard & Newsom and Tristar Freight System, Inc.	County Court at Law No. Three El Paso County, Texas	No. 2006-3255	Mr. James Scherr - Scherr Legette & Ehrlich and Mr. Angel Saenz - Saenz & Torres	7/30/2008	Deposition
BNSF Railway Company, Plaintiff Vs. The Doe Run Resources Corporation, et. al., Defendants	Circuit Court For The City of St. Louis State of Missouri	Cause No. 052-01585 Division 1	Mr. Vincent Reese - Lewis, Rice, Fingersh, L.C.	8/7/2008 and 8/8/2008	Deposition
Phillip Ramirez vs. BNSF Railway Company	96th Judicial District Court Of Tarrant County, Texas	Cause No. 096-227107-07	Mr. Rodney Townsend - Barton, Price, McElroy & Townsend	10/9/2008	Deposition
Clinton Kelly & Julie Kelly vs. Union Pacific Railroad Company and BJ Services, USA	United States District Court District of Wyoming	Civil Action No. 08CV088-J	Mr. George Powers - Sundahl, Powers, Kapp & Martin	12/2/2008	Deposition
Rosalinda Trevino, Individually and As Next Friend of Jeannette Ann Mendietta and Jannel Mendietta, Minor Children and Julian Mendietta vs. Union Pacific Railroad Company	United States District Court Southern District of Texas Corpus Christi Division	Civil Action No. CA-C-08-134	Mr. Ryan Brent - Rosenthal & Watson	12/30/2008	Deposition

<u>Case</u>	<u>Court</u>	<u>Cause No.</u>	<u>Firm Attorney</u>	<u>Date</u>	<u>Type of Testimony</u>
Luz Chavez, et. al. Vs. Kansas City Southern Railway Company and Joe Juarez	406th Judicial District Court of Webb County Texas	Case No. 2007- CVE-000347- DV	Mr. Marc Alverado - Rosenthal & Watson	1/5/2009	Deposition
Coker vs. BNSF	United States District Court Western District of Oklahoma	Case No. CIV- 07-1101-M	Mr. John Merritt - The Merritt Law Firm	1/29/2009	Deposition
Steve B. Glenn vs. Union Pacific Railroad Company	Third Judicial District Court Of Sweetwater County Wyoming	Civil Action - C- 04-434-J	Mr. Frederick Harrison - Law Offices of Frederick J. Harrison	3/3/2009	Deposition
Anthony Crooks, ET AL vs. LCS Correction Services, Inc. et AL	19th Judicial District Court East Baton Rouge Parish State of Louisiana	Docket No.: 475,405	Mr. Patrick W. Pendley, Pendley, Baudin & Coffin, L.L.P.	8/19/2009	Deposition
James C. Lee vs. Union Pacific Railroad Corporation, Union Pacific Railroad Company and Alejandro Farias, Jr.	343rd Judicial District Court Of San Patricio County, Texas	Cause No. S- 08-5402CV-C	Mr. Simon Purnell - Anthony, Peterson, Purnell, L.L.P.	8/27/2009	Deposition
Steve B. Glenn vs. Union Pacific Railroad Company	Third Judicial District Court Of Sweetwater County Wyoming	Civil Action - C- 04-434-J	Mr. Frederick Harrison - Law Offices of Frederick J. Harrison	9/18/2009	Trial
Luz Chavez, et. al. Vs. Kansas City Southern Railway Company and Joe Juarez	406th Judicial District Court of Webb County Texas	Case No. 2007- CVE-000347- DV	Mr. Marc Alverado - Rosenthal & Watson	9/24/2009	Deposition

**United States District Court  
Northern District of Oklahoma**

**Dennis R. Cornwell  
vs.  
Union Pacific Railroad Company**

**Case No. 4:08-CV-638-JHP-TLW**

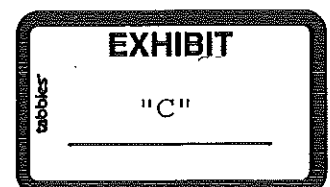
**Supplemental Expert Report**

**Of**

**Allen W. Haley Jr.  
December 14, 2009**



Strategic Transportation Services  
303 First Street West  
Marathon, Texas 79842  
(432) 386-4217



## **I. Background**

I am Allen Haley, Principal, and Senior Rail Consultant of Strategic Transportation Services, a consulting firm specializing in issues related to railroads and rail transportation. My background is one of over 36 years in the railroad industry either as a railroad employee or as a consultant.

My experiences in the railroad industry as well as formal and practical training that I have received provide me with the basis and knowledge for offering the expert opinions set forth in this report.

My qualifications, experience and background for providing expert testimony in this case were presented in my expert report of November 18, 2009.

My qualifications were further detailed in my resume which was attached as Appendix A of my expert report of November 18, 2009

Cases in which I have offered testimony, my Rule 26 listing, were included in Appendix B of my expert report of November 18, 2009.

## **II. Assignment**

The firm of Merritt & Associates, P.C. retained my company to review documents and other information pertaining to an accident that occurred on July 16, 2008 at or near to the East Flint Street Crossing in Vinita, Oklahoma.

For this assignment, my rate of compensations is \$175.00 per hour for general consultation, document review, report preparation and \$200.00 per hour for time consumed preparing for and offering testimony at trial or deposition.

## **III. Data Reviewed**

In addition to the documents listed in Section III of my expert report of November 18, 2009, I have additionally reviewed these documents.

- Additional photographs taken by UP and by State Farm.
- Documents produced by UP on November 25, 2009.
- Documents and files pertaining to the grade crossing improvement and crossing closures in Vinita, Ok.
- Hand drawn document depicting measurements at East Flint Street and UP Railroad, not Bates Stamped.

I additionally conducted a site inspection of the accident site at Vinita, Oklahoma on December 10, 2009.

#### **IV. Opinions**

Based on the information that I have reviewed, the opinions that follow are rendered to a reasonable degree of certainty. To the extent that additional information becomes available from discovery or from depositions, I reserve the right to modify these opinions or to formulate new opinions from that additional information.

The opinions offered in my November 18, 2009 report are incorporated into and adopted by this supplemental expert report which changes made as indicated in the following.

**1. Opinion No. 2 of my November 18, 2009 report is revised as follows.**

UP rules contained in the General Code of Operating Rules require that train and engine crews comply with the maximum speeds allowed for their train over the specific areas of the railroad where they are operating.

***"6.31 Maximum Authorized Speed  
Conductors and engineers are jointly responsible for knowing and not exceeding the maximum authorized speed for their train.  
Passenger speed is applicable only to trains consisting entirely of passenger equipment.  
When possible, crew members must notify the train dispatcher promptly of any condition that will delay or prevent their train from making the usual speed."***

Event recorder data from locomotive UP 8130 on the UP train involved in the subject accident of July 16, 2008 shows that the Engineer of this train was operating the train at a speed of forty-two (42) miles per hour at the time of impact and had been at this speed for a period of approximately seventy-three (73) seconds. The maximum authorized speed for freight trains at this location is forty (40) MPH, not forty-two (42) MPH as the train was being operated.

It is my opinion that Engineer of the UP train involved in the accident of July 16, 2008 was violating railroad rules contained in the GCOR as well as in railroad timetables and possibly General Orders or Track Bulletins as he exceeded the maximum authorized speed for his train.

Additionally, I have reviewed the event recorder data and compared it to the visual information contained in the TIR to determine the stopping point of the locomotive. In analysis of the video information on the TIR, it is easily determined by counting the number of frames between two events that the locomotive moved for eight hundred and thirty-five frames (835) or approximately fifty-six (56) seconds after the impact at East Flint Street. It is further visible in the TIR video that the locomotive moves past the old Delaware Crossing before coming to a complete stop.

Comparing the elapsed time from the TIR with the event recorder data we find that the event recorder shows a movement of 1,903 feet from impact to stopping over the fifty-six (56) seconds. Comparing this distance to measurements taken off of Google Earth, using visual references in the TIR video, we find instead that the locomotive appears to come to a complete stop closer to 2,150 feet past the point of impact. Measurements taken during my site inspection of December 10, 2009 have confirmed that this distance is 2,060 feet, instead of 2,150 feet. These measurements, when analyzed against the event recorder data, reveals an apparent error in the event recorder of approximately eight (8) percent in the distance and as such the speed recorded on the event recorder. This error likely could be attributed to an incorrect wheel measurement entry into the event recorder playback software, a fact which I hope to confirm through future depositions or discovery.

Using this apparent error in the distance and as such in the locomotive speed, calculations quickly show that the approximate speed of the train on July 16, 2008 as it approached and operated over East Flint Street was closer to forty-five (45) miles per hour instead of the recorded forty-two (42) MPH. This would have been even further in excess of the maximum authorized speed for trains in this location.

I have performed an analysis of the speed of the train and closure time beginning one-hundred twelve (112) seconds before impact when the train speed increased from forty (40) MPH to forty-one (41) MPH and continued through the time at seventy-three (73) seconds from impact when the speed increased to forty-two (42) MPH. Presuming that, the train speed as recorded was correct, a fact that we are not admitting, had the train been instead moving at forty (40) MPH during this entire one-hundred twelve (112) second period, in compliance with UP rules and regulations as well as in compliance with the speed for trains required in 49 CFR Part 213 Track Safety Standards, the locomotive would have reached the point of impact approximately four (4) seconds later.

It is my opinion that the engineer of the UP train with lead unit UP 8130, in operating the train in excess of the maximum authorized speed for trains at the location, in violation of UP rules and Federal Regulations was a proximate cause of the accident of July 16, 2008.

It is further my opinion that the operation of the UP train in excess of published and known rules restricting the speed was a willful violation and was indifferent to the safety of the train and the public who used or would use this crossing on the approach of the this train.



**2. Opinion No. 3 of my November 18, 2009 report is revised as follows.**

I have viewed and listened to a copy of the TIR videotape that was recorded by the device on locomotive UP 8130 of the train which was involved in the accident of July 16, 2008. This videotape appears to have recorded both visually and in sound the movement of the subject train for a number of miles before it arrived at and at the time it arrived at the subject accident crossing.

The TIR recorded the video and audio as the train moves over the tracks from the beginning of this recording, through the impact at East Flint Street and finally continuing southward until it came to a stop about fifty-six (56) seconds later and continuing on for several minutes later. During this time, I can detect sounds that I am familiar with through my years of experience riding locomotives of trains. It is easily heard in the video the passage of the locomotive over track structures such as switches, frogs and trestles. Additionally, the sounds of the locomotive bell pneumatic control valve on the control stand of the locomotive and the sound of the front door closing on the locomotive can be heard. The crash between the train and the Cornwell vehicle can also be heard on the sound portion of video.

In the numerous times that I have listened to this video, no whistle is heard on the sound portion of the video recording for the time period the train approached the subject crossing where the accident occurred. Further, no whistle can be heard to have sounded on the sound portion of the video recording as the train approached a number of crossings prior to and after the subject accident crossing.

In my experience in the railroad industry, as well as my review of other TIR recordings while working as a retained expert, I have always been able to detect the sound of the locomotive whistle while in the cab of the locomotive and on other TIR recordings.

The locomotive horn has specific sound standards which are required by the Federal Railroad Administration (FRA). The requirements for the locomotive horn are contained in 49 CFR Part 229.129, which states:

***"§ 229.129 Locomotive horn.***

***(a) Each lead locomotive shall be equipped with a locomotive horn that produces a minimum sound level of 96 dB(A) and a maximum sound level of 110 dB(A) at 100 feet forward of the locomotive in its direction of travel. The locomotive horn shall be arranged so that it can be conveniently operated from the engineer's usual position during operation of the locomotive."***

Locomotive UP 8130 is classified as an SD9043MAC which was manufactured in April 1997. It's overall length eighty (80) feet, with the front and rear facing horns located near the center of the locomotive, thus forty (40) feet or less from the locomotive cab. Based upon my railroad experience, both in occupying cabs of locomotives that are being operated at track speeds when the horn is sounded, and on my background and experience in mechanical compliance with FRA regulations, it is my opinion that if the horn of UP 8130 was sounded and the horn was operating within normal parameters it would have been heard in the cab of the locomotive and on the TIR audio.

Based upon the absence of a train whistle in the audio of the TIR, it is my opinion that the whistle on locomotive UP 8130 was not detectable by the vehicular traffic at the East Flint Crossing, including the decedent as she approached the grade crossing.

It is also my opinion based upon my years of experience in dealing with eyewitnesses to grade crossing accidents, that the two witness affidavits presented by UP are suspect due to the conflicting and unbiased audio information contained in the audio portion of the TIR. It is my opinion that these affidavits, and presumably their statements are probably erroneous and may be based upon some presumptions made by these witnesses as to the location of the train when they believe they heard the locomotive whistle.

Additionally, it is possible that based on the proximity of one of these ear-shot witnesses that the sound they recollect could have been heard after the impact occurred. Also, based on their proximity to the train at the time that the accident occurred they both could have heard other sounds such as the train brakes or the impact sounds and mistakenly presumed by them to be the train whistle.

Based on my site inspection where I determined the approximate distance and bearing between these witnesses and the locomotive, it is possible that a locomotive whistle, if heard by them, may still not have been sufficiently loud enough to meet the 96 db requirement nor to be recorded on the TIR. As an example, if the forward facing horn on the locomotive was not sounding at all or at a very low level, but the rear facing horn was sounding as required, they may have simply detected the sound from the rear horn as it passed their locations. As such, the witnesses would have been able to hear a whistle, not realizing that it was past them, while the TIR recorder to the front of the locomotive and the decedent likely would not have heard this rearward facing locomotive whistle as the train approached East Flint Street crossing.

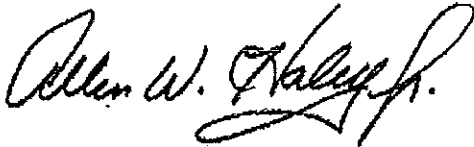
Of the two witnesses that offered affidavits in this case, Ms. Davis is the furthest removed from the location of the accident. Ms. Davis offers in her affidavit that she was inside her home at 350 N. First Street, which is close to the Tahlequah Street crossing and approximately 1,760 feet from the East Flint Street Crossing. It is unclear to me how she was able to see the Tahlequah Street crossing from inside her home and determine that the train was sounding the whistle, "before it got to the house" and not instead past her house or no whistle at all.

Both witnesses in their affidavits state that the whistle, "sounded like a typical train whistle to me", but neither appear to know nor offer any support that the locomotive whistle was compliant with the FRA's requirements for decibel level forward of the locomotive in direction of travel.

Both witnesses in their affidavits state that they have "never had a problem seeing a train coming in this crossing". Neither witness gives us the necessary additional information in their affidavit to correlate their direction of vehicular crossing at the railroad track. Visibility along the west side of the track, which is the vantage point the Mr. Sheckles likely had on the day of the accident, is unobstructed unlike visibility on the east side of the track which is the direction that the decedent approached from. As such, if each of these witnesses made these statements based upon their recollection of an eastbound vehicular movement towards the crossing it would likely not be consistent with their experience when traveling westbound.

It is my opinion that UP acted in a manner not consistent with a reasonable standard of care and with a negligent disregard for the safety of the public when they operated locomotive UP 8130 on July 16, 2008 as the lead locomotive of a train when the horn may not have been detectable in advance of the train as required by the regulations and possibly in violation of Federal Regulations related to the horn requirement for lead locomotives on trains.

Prepared and submitted by:

A handwritten signature in black ink, reading "Allen W. Haley Jr." in a cursive script.

Allen W. Haley Jr.  
December 14, 2009